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THREE NEW SPECIES OF LEBERTIOIDEA (ACARI, HYDRACHNELLAE) FROM IRAN

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Abstract Three species of Lebertioidea are described as new to science: *Lebertia (Pseudolebertia) abseta* sp. nov., *Nilotonia (Dartia) pinnata* sp. nov., *Torrenticola (Monoatractides) diploseta* sp. nov. The location patterns of glandularia and ocularia of the new species are described and illustrated in details.
Key words Lebertioidea, *Lebertia*, *Torrenticola*, *Nilotonia*, new species.

There are eight families and more than 1 100 known species of the superfamily Lebertioidea on the world. Three species new to science described here belong to three families of Lebertioidea respectively, they are Anisitsiellidae Lebertiidae and Torrenticolidae. The specimens were collected by Mahdieh Asadi from a stream in Kerman (28°3′N, 61°9′E), Iran. The type specimens are kept in the Institute of Entomology, Guizhou University, China. The measurements are given in μm.

The abbreviations and terms used in text are:

A1, A2: antennal glandularia 1 and 2.

D1-D4: dorsoglandularia 1-4.

E1-E4: epimeroglandularia 1-4.

L1-L4: lateroglandularia 1-4.

O1, O2: ocularia 1 and 2.

V1-V4: venteroglandularia 1-4.

Ep Ⅰ-Ⅳ: epimera Ⅰ-Ⅳ.

AEG: anterior epimeral group (Ep Ⅰ + Ep Ⅱ).

Ap: anal pore.

Gf: entire genital field, width measured by outer margin of both sides.

Ib: infracapitulum bay (capitular bay).

PEG: posterior epimeral group (Ep Ⅲ+ Ep Ⅳ).

MD PEG: median distance of post-median angle of Ep Ⅳ.

ML AEG: median length from posterior limit of Ib to posterior end of Ep Ⅱ.

ML Ep Ⅰ: median length from posterior limit of Ib to posteriorend of Ep Ⅰ.

Ib-Ap: distance between posterior limit of Ib and edge of Ap.

Ib-Gf: distance from Ib to anterior edge of Gf.

Ib-PEG: distance between Ib to the median angle of PEG.

Ⅰ-L-3-6, etc: first leg's segments 3-6, etc.

P-Ⅰ-P-Ⅴ: palpal segments 1-5.

1 Lebertia (Pseudolebertia) abseta **sp. nov.** (Figs. 1-7)

Male. Body round in outline, 780 (761-792) in length, 770 (753-783) in width. Integument furnished with irregularly fine lined. The distance between A1 is much shorter than that between O1; distance between A2 shorter slightly than that between O2, A1 seta long and smooth. Single epimeral group, 611 (602-621) in length and 601 (596-608) in width. Ib U-shaped, 164 (146-175) in depth, 86 (77-92) in width. ML Ep Ⅰ, 176 (159-185); ML AEG, 291 (274-299); Ib-Gf, 296 (271-303); Ib-Ap, 665 (643-672). Suture lines between Ep Ⅲ and Ep Ⅳ reach to 2/3 of the plate. Ep Ⅳ widest, with gently rounded sides. Gf 201 (196-204) in length, 136 (131-138) in width, acetabula three pairs, the first and second pairs of which elongated elliptical, the third smallest with rectangular outline. MD PEG 169 (164-172). E1 long, smooth and with a seta-like cuticle extension on the tip of Ep Ⅰ. E4 near post-median angle of Ep Ⅳ. Infracapitulum 180 in length, dorsal apodeme sharp and short, ventral apodeme long and turning up with sharp terminal. Chelicera 235 (231-239) in length. V1 on the line of postgenital field, V2 on two sides of anal pore and V3 close to Ep Ⅳ. Dorsal lengths of the palp segments: P-Ⅰ, 30 (28-31); P-Ⅱ: 85 (82-86); P-Ⅲ, 83 (80-85); P-

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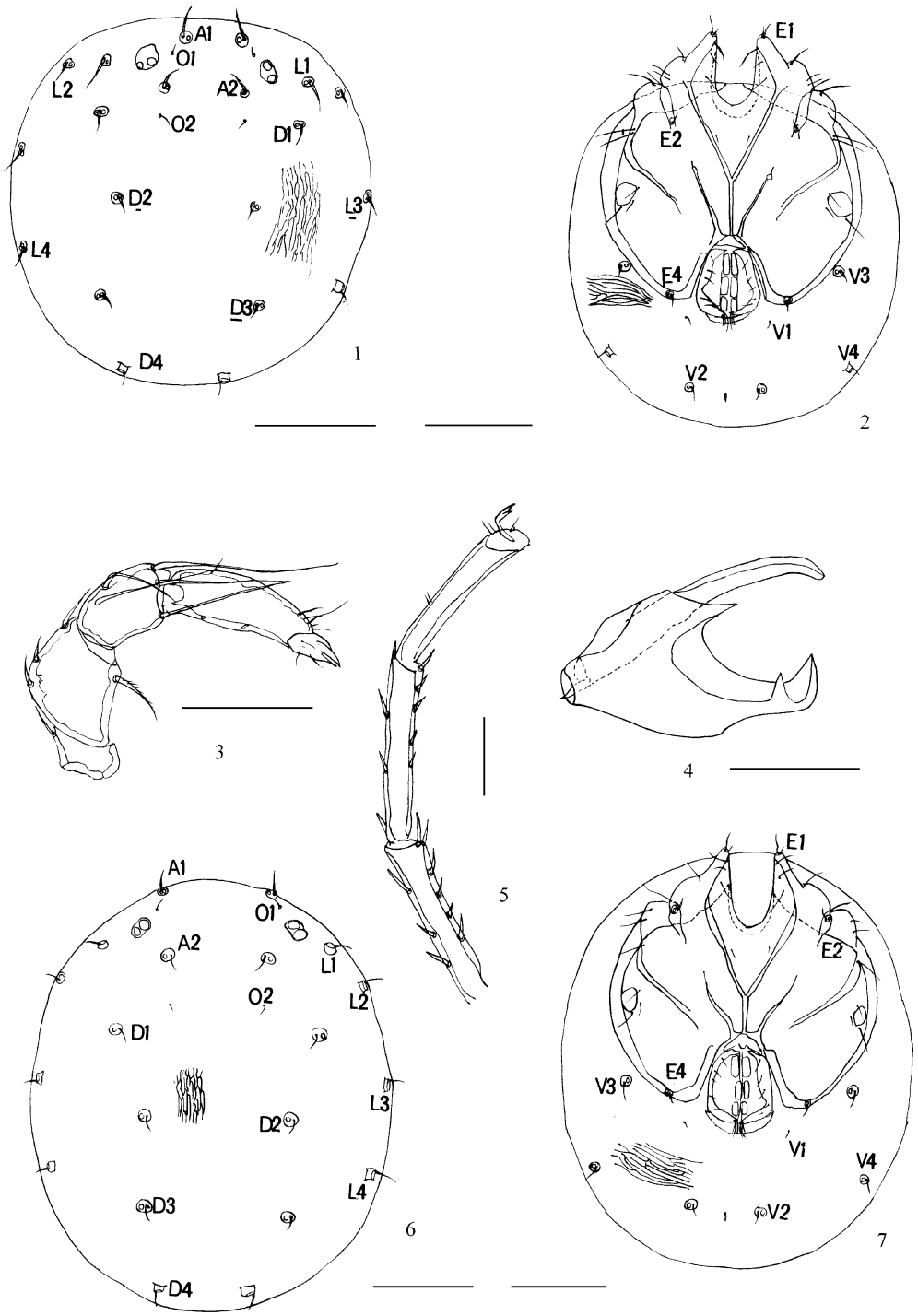
Ⅳ, 113 (109-114); P-V, 30 (28-31). P-I with a dorsal seta reaching to 1/3 length of P-Ⅱ. P-Ⅱ with 3 dorsal setae and a heavy ventral seta, at about 3/4 of the P-Ⅱ, carrying fibrous extensions on one side. P-Ⅲ with 5 smooth long setae, of which 3 terminally and 2 about middle dorsally. P-Ⅳ with 5 short setae at the dorsal tip and 2 ventral lyrifissures, of the later one at 1/3 and another at the 2/3 of P-Ⅳ venter. The dorsal lengths of leg Ⅰ terminal segments: Ⅰ-L-3, 85 (82-86); Ⅰ-L-4, 130 (127-132); Ⅰ-L-5, 140 (136-142); Ⅰ-L-6, 135 (132-136); dorsal lengths of leg Ⅳ segments: Ⅳ-L-3, 150 (146-153); Ⅳ-L-4, 225 (219-227); Ⅳ-L-5, 295 (288-298); Ⅳ-L-6, 201 (197-203). No swimming seta on four legs.



Figs. 1-7. *Lebertia (Pseudolebertia) abseta* sp. nov. 1. Dorsal view of male. 2. Venter view of male. 3. Palp of male. 4. Infracapitulum of male. 5. Ⅳ-L-4、5 and 6, male. 6. Dorsal view of female. 7. Venter view of female. Scale bars: 1-2, 6-7= 250 μm; 3= 50 μm; 4-5= 100 μm.

Female. Body length 1 041 (1 029-1 047), width 918 (910-927). Distributions of glandularia same to male. Single epimeral group, 661 (655-667) in length and 691 (683-698) in width; Ib 198 (196-201) in depth, 106 (104-107) in width; ML Ep Ⅰ, 174 (172-175); ML AEG, 284 (280-285); Ib-Gf, 286 (284-289); Ib-Ap, 742 (737-747); Gf 296 (295-298) in length, 166 (165-168) in width. Infracapitulum 251 (248-252) in length. Chelicera 274 (270-276) in length. Acetabula three pairs. Palp similar to male, dorsal lengths of palpal segments: P-Ⅰ, 40 (38-41); P-Ⅱ, 100 (98-101); P-Ⅲ, 95 (93-96); P-Ⅳ, 125 (123-128); P-Ⅴ, 45. Dorsal lengths of leg Ⅰ terminal segments: Ⅰ-L-3, 115 (113-116); Ⅰ-L-4, 149 (148-152); Ⅰ-L-5, 161 (160-163); Ⅰ-L-6, 151 (150-152). Dorsal lengths of terminal leg Ⅳ segments: Ⅳ-L-3, 195 (192-196); Ⅳ-L-4, 270 (268-274); Ⅳ-L-5, 290 (288-293); Ⅳ-L-6, 248 (245-252). No swimming seta on legs.

Holotype m, slide 2001-Ⅱ-111, Iran: Kerman (28°3′N, 61°9′E), 11 Feb. 2001, COLL. Mahdieh Asadi. Paratypes 2m, 3f, slides 2001-Ⅱ-112, 2001-Ⅱ-113, 2001-Ⅱ-114, 2001-Ⅱ-115, and 2001-Ⅱ-116, same data as holotype.

Etymology. Ab-, absent, none. The specific name is derived from the legs without swimming hairs.

Distribution. Iran (Kerman).

Remarks. This new species is separated from the other species in Lep- (psud-) by pectinated ventral seta of P-Ⅱ and legs without swimming seta.

2 Nilotonia (Dartia) pinnata **sp. nov.** (Figs. 8-13)

Male Body dorso-ventrally flat, 761 in length, 660 in width. Integument weak and finely papillated with three dorsaliae, of which two small and fused with the base of O2, single one big and at the central of posterior part of body. Distance between O1 shorter than that between A1; distance between A2 almost as long as that between O2. A1 seta long and serrated. O1 seta short and slender. Ib V-shaped, 113 in depth. Four epimeral groups, Ep Ⅰ 281 in length, AEG median suture slight, and with posterior apodeme extending to inner of PEG. PEG 319 in length, 51 away from each other at median angle, with posterior apodeme. E1 and E3 absent, E2 lie on the suture of AEG and PEG, E4 on the midian angle of PEG, small pore-liked and even indistinguishable. Genital field between Ep Ⅳ, 195 in length and 126 in widtn; acetabula three pairs, the first pair elongated elliptical and narrow, the second and third far away from the first pair and wider with round outline. Genital flaps developed with some long setae. Length from AEG posterior limit to anterior edge of Gf 56, to Ap 396. V1 on both sides of Gf and almost on the line with the third acetabula without gland. V3 close to posterior edge and outer edge of PEG apodeme. Infracapitulumh 194 in length, chelicera 194 in length, chelicera claw with small denticle. Dorsal lengths of the palp segments: P-Ⅰ, 18; P-Ⅱ, 151; P-Ⅲ, 79; P-Ⅳ, 162; P-Ⅴ, 35; P-Ⅰ with a peg-like dorsal seta; P-Ⅱ with 5 dorsal setae of which the disto-dorsal four setae pectinated and the third one longest; ventral seta smooth and at the middle of P-Ⅱ. P-Ⅲ with 4 smooth setae, of which disto-dorsal seta longest. P-Ⅳ with 1 short disto-dorsal seta and 4 ventral setae, of which the second longest and the second and third with small papilla-liked bases. The dorsal lengths of leg Ⅰ terminal segments: Ⅰ-L-4, 122; Ⅰ-L-5, 145; Ⅰ-L-6, 149; dorsal lengths of leg Ⅱ segments: Ⅱ-L-4, 166; Ⅱ-L-5, 181; Ⅱ-L-6, 161; dorsal lengths of leg Ⅳ segments: Ⅳ-L-4, 211; Ⅳ-L-5, 249; Ⅳ-L-6, 241. No swimming seta on four legs but with different number of pectinated peg-like setae: L-Ⅰ-2, 1; L-Ⅰ-3, 2; L-Ⅰ-4, 3; L-Ⅱ-3, 1; L-Ⅱ-4, 2; L-Ⅲ-4, 1; L-Ⅲ-5, 2; L-Ⅳ-2, 1; L-Ⅳ-3, 2; L-Ⅳ-4, 3; L-Ⅳ-5, 1. Claw of leg Ⅰ small.

Female. Unknown.

Holotype m, slide 2001-Ⅱ-111, Iran, Kerman (28°3′N, 61°9′E), 11 Feb. 2001, COLL. Mahdieh Asadi.

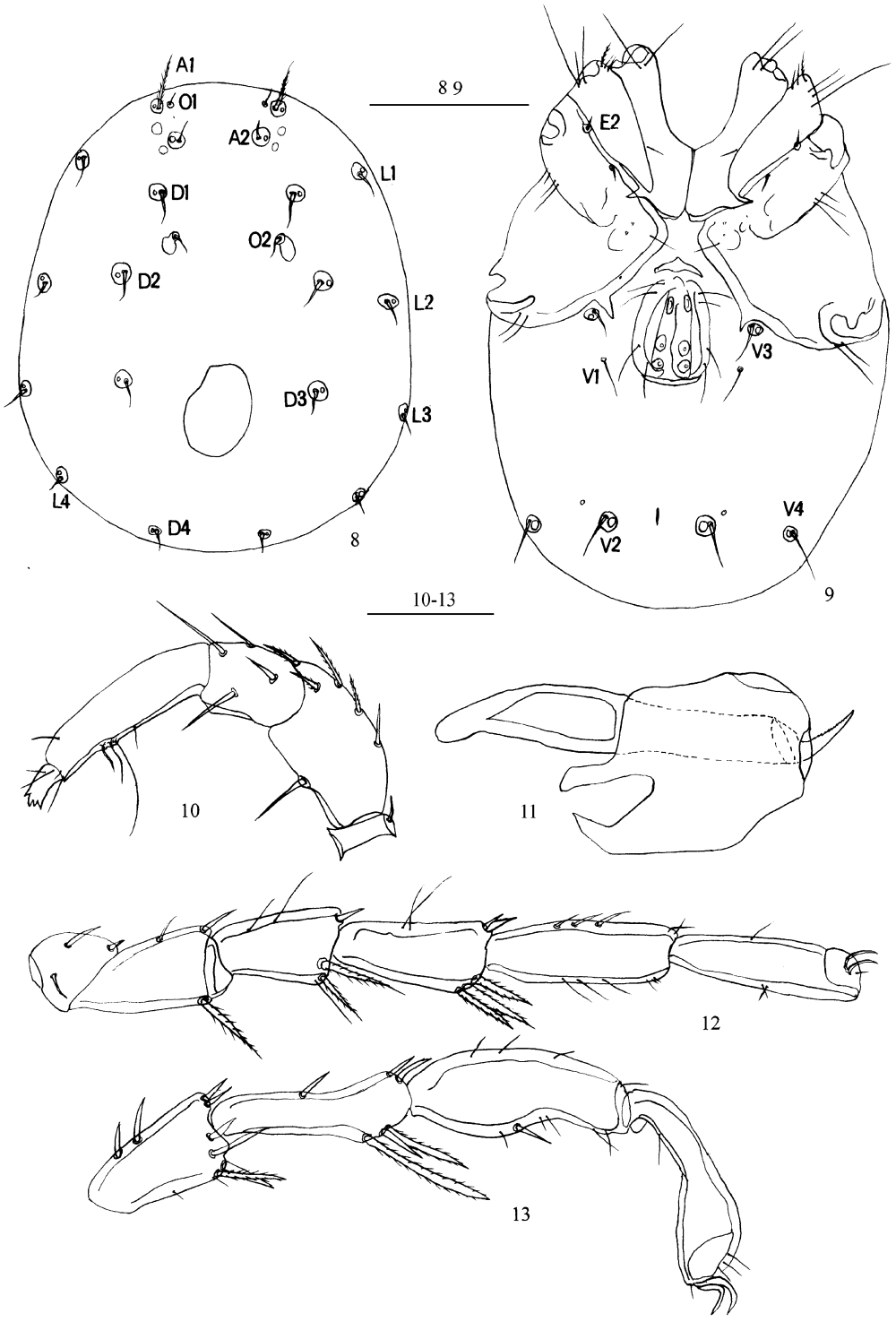
Etymology. The specific name is named after the character of pectinated seta of P-Ⅱ.

Distribution. Iran (Kerman).

Remarks. This new species is similar to *Nilotonia (dartia) viets* Bader & Sepasgozarian, 1980 from Iran but differs in the location of O1, the number of seta and pectinated seta of P-Ⅱ and structure on legs.

3 Torrenticola (Monoatractides) diploseta **sp. nov.** (Figs. 14-18)

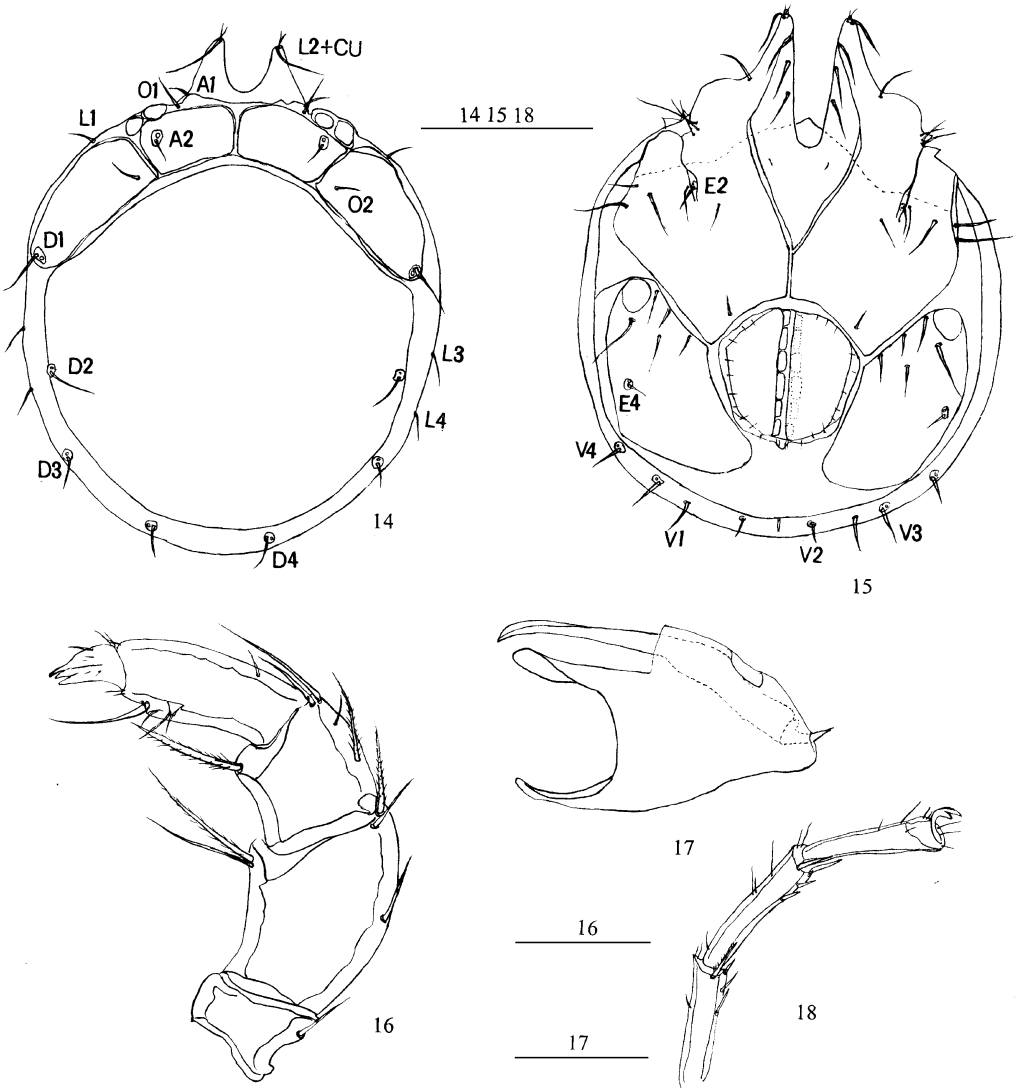
Female. Body round in outline, 669 in length, 628 in width. Dorsal shield 581 in length, 558 in width; two pairs of small platelets present at anterior end of dorsal shield; the anterior pair of these platelets 148 in length, 96 in width; the posterior pair 204 length, 96 in width. Dorsal shield without colour pattern. Infracapitular bay deep and narrow, 193 in length, 54 in width. L2 at the anterior end of AEG, with two seta-like cuticle extentions sharing same base.



Figs. 8-13. *Nilotonia (Dartia) pinnata* sp. nov. ♂. 8. Dorsal view. 9. Venter view. 10. Palp. 11. Infracapitulum. 12. Leg Ⅰ. 13. Ⅱ-Ⅲ, 4, 5 and 6. Scale bars: 8-9= 250 μm; 10-13= 100 μm.

ML Ep Ⅰ 146, medial coxal suture 73 in length. Genital field 206 in length, 207 in width; six pairs of genital acetabula, sides of genital flaps more or less parallel. Ep Ⅳ posterior outline obvious. E4 at line with the posterior of the fourth pair of acetabula. Anal pore nearly on line with V1 and V2, which arc-like arranged with V3 and V4 in ventral view. Ib-Gf, 223; Ib-Ap, 553. Infracapitulum 218 in length, infracapitular rostrum short, ventral apodeme narrow and sharp, dorsal apodeme wide and slightly longer than ventral apodeme. Chelicera 256 in length. Dorsal lengths of the palp segments: P-Ⅰ, 29; P-Ⅱ, 81; P-Ⅲ, 49; P-Ⅳ, 65; P-Ⅴ, 25. P-Ⅰ with a dorsal seta, reach to 1/4 length of P-Ⅱ; P-Ⅱ with 3 dorsal setae

and 2 distoventral setae, the distalest one pectinated; P-III with 4 dorsal setae, of which dorsal median one pectinated, and 1 ventral seta pectinated strengthened; P-IV with 2 vemtral process and each of them carried 2 setae, heavy one of these setae on the process near the P-IV tip. P-V divided into 4. The dorsal lengths of L-I terminal segments: I-L-3, 99; I-L-4, 126; I-L-5, 122; I-L-6, 106; the dorsal lengths of L-IV terminal segments: IV-L-3, 166; IV-L-4, 211; IV-L-5, 231; IV-L-6, 206.



Figs. 14-18. *Torrenticola (Monoatractides) diploseta* sp. nov. ♀. 14. Dorsum view. 15. Venter view. 16. Palp. 17. Infracapitulum. 18. I-L-4, 5 and 6. Scale bars: 14-15, 18= 250μm; 16= 50μm; 17= 100μm.

Male. Unknown.

Holotype f, slide 2001-XII-28, Iran, Kerman (28°3′N, 61°9′E), 28 July 2001, COLL. Mahdieh Asadi.

Etymology. Diplo-, double, two. The specific name is derived from its two ventral setae of P-II.

Distribution. Iran (Kerman).

Remarks. This new species can be separated from other species in To- (Mo-) by two ventral setae of P-II with the stronger one pectinated and pectinated setae of P-II and P-III.

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伊朗腺水螨总科三新种记述 (蜱螨亚纲, 水螨群)

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摘 要 记述了采集自伊朗的腺水螨总科 Lebertioidea 3 新种: 光足腺水螨 *Lebertia (Pseudolebertia) abseta* sp. nov., 羽足尼罗螨 *Nilotonia (Dartia) pinnata* sp. nov., 双羽激流水螨 *Torrenticola (Monoatractides) diploseta* sp. nov.。光足腺水螨 *Lebertia (Pseudolebertia) abseta* sp. nov. P Ⅱ 羽状腹毛和无游泳毛的各足等形态特征可与其它种类明显区别; 羽足尼罗螨 *Nilotonia (Dartia) pinnata* sp. nov. 鉴别性特征为 OI 的位置, P Ⅱ 羽状毛的数量和结构等; 双羽激流水螨 *Torrenticola (Monoatractides) diploseta* sp. nov. 其 P Ⅱ 具 2 腹毛, 其中较为粗壮 1 毛羽状, 此外 P Ⅱ 和 P Ⅲ具数量不等的羽状毛等特征可与其他种类区别。同时文中对上述 3 新种的腺毛和眼毛的体位特征作了详细描述。

关键词 腺水螨总科, 腺水螨属, 激流水螨属, 尼罗螨属, 新种.
中图分类号 Q969.226